said step (c-3) comprises a step of

patterning said third insulation film, said conductive layer and said doped polysilicon layer.--

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## REMARKS

Favorable reconsideration of this application, as presently amended, is respectfully requested.

The Office Action contains an objection to the change to line 3 of page 93 as introducing new matter. The change has been amended to coincide with the value in Table 7. Withdrawal of the objection to this change is respectfully requested.

Claims 14-27 are present in this application, claims 10-13 being canceled and claims 16-27 being added by way of the present amendment. Claims 10, 14, and 15 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. 5,893,739 to Kadosh et al in view of the book by Wolf. Claims 12, 14 and 15 stand rejected under 35 U.S.C. §112, second paragraph. Claims 11-13 have been allowed and claim 12 would be allowable is rewritten or amended to overcome the §112 rejection.

The Applicants greatly appreciate the findings that claims 11-13 recite patentable subject matter.

Claim 14 has also been amended to address the misspelling and withdrawal of the §112 rejection of claims 14 and 15 as respectfully requested.

Before addressing the prior art rejection, the Applicants would like to provide the following brief description. The present invention is directed to a method of manufacturing a semiconductor device. In one aspect, the method is directed to forming at least two types of transistors, with control electrodes having different nitrogen concentrations. It is possible to

change the effective thickness of the gate oxide films with changing the nitrogen concentrations, avoiding having to form oxides films of different thicknesses.

Turning to the §103 rejections, claim 10 has been amended to recite a method in which two transistors are formed with different nitrogen concentrations in the respective first and second control electrodes. Such a method is clearly not taught by the cited prior art. In Kadosh et al, each of the transistors is formed with the nitrogen concentration higher in the lower portion of the gate electrode. There is no suggestion of forming a device with two transistor having different nitrogen concentrations, as recited in claim 10. Nothing in Kadosh et al provides any suggestion that it would be advantageous to have transistors with different nitrogen concentrations in the same device. One skilled in the art would clearly not be able to obtain the present invention as recited in claim 10 based upon the teachings of Kadosh et al.

Wolf et al is relied upon for basic teachings of forming field oxide layers, basic techniques of transistor formation, and threshold adjustment. There is no disclosure or suggestion of forming control electrodes having nitrogen. Thus, even if such teachings were combined with Kadosh et al, one would still fail to disclose or suggest the method of claim 10 since neither reference contains any suggestion of forming transistors with the recited the nitrogen concentrations. Accordingly, claim 10 is clearly patentably distinguishable over the applied prior art and therefore allowable.

In claim 14 transistors are formed from the same polysilicon layer where the transistors in the first region have a polysilicon layer with an impurity of the same conductivity type as the source/drain layer, and the transistors in the second region have a polysilicon layer with the impurity region at a higher dose and nitrogen introduced into a lower portion of the polysilicon layer. The Office Action points to a sentence in Kadosh et al describing that nitrogen implantation is not needed when the polycrystalline silicon layer is

doped appropriately, at column 12, lines 34-42. However, this portion describes how the boron implant needs to be controlled relative to the polysilicon layer thickness. In no way does this suggest forming both doped polysilicon layers with and without nitrogen from a single polysilicon layer. This portion of Kadosh et al simply describes an alternative to implanting nitrogen where the thickness of the polysilicon layer is made different relative to the boron implant, or vice versa. Kadosh et al describe there is a relationship between the boron implant concentration and the polysilicon layer thickness, but fails to describe what that relationship is. What it clearly suggests is that if one chooses not to have nitrogen, then one must select the boron implantation carefully relative to the thickness of the polysilicon layer.

In the present invention according to claim 14, the thickness of the polysilicon layer is the same for both of the types of transistors since they have the same layer, where one contains an impurity and a second contains both an impurity at a higher dose and nitrogen. Nothing in Kadosh et al suggests that it would be possible, with the same polysilicon layer to have two dopants where the higher doping would also include introducing nitrogen. Kadosh et al only contain a vague statement regarding controlling the boron implant and the polysilicon layer thickness, and in no way suggests it is possible to have both types of transistors on the device having the concentrations as recited in claim 14. It is therefore respectfully submitted that claim 14 is patentably distinguishable over Kadosh et al.

As mentioned above, Wolf is relied upon for basic transistor formation techniques such as field oxide regions and threshold voltage adjustment. Even if such teachings were included with that of Kadosh et al, one would still not be able to obtain the present invention as recited in claim 14 since neither reference discloses nor suggests a method for forming transistors on a semiconductor device as recited in claim 14. Claim 14 is therefore patentably distinguishable over the applied prior art and therefore allowable.

It is respectfully submitted that the present application is in condition for allowance and a favorable decision to that effect is respectfully requested.

Respectfully submitted,

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